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15 March 1960

Subject: Major Investment Projects 1959-1965
 Trends and Changes in Polish Construction Industry.

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SUBJECT: Major Investment Projects 1959-1965.

1. Introduction

The investment plan for the period 1959-1965 was laid down in the Directives for Economic Development of the Polish Peoples Republic by the III Congress of the Polish United Workers Party (PZPR) in March 1959. Later on in June 1959 the II Plenum of PZPR introduced some additional tasks concerning agricultural investments.

The directives established the main tasks, and the details were later on worked out by the State Economic Planning Commission. However, some investment projects were already fixed by the above mentioned directives and were called for on the highest level, and their realization could not be postponed by the later detailed programs of the yearly plans.

Some of the most important investment projects are listed in the yearly resolutions of the Ministers Council (In a special annex to the resolution about the national economic plan for the year....called "The list of more important investment projects"), and these projects must be implemented. They are called Key Projects (Objekty Kluczowe).

The inclusion of an investment in the list of Key projects means granting of priority, although even here there are various grades of priority. This study gives a list and some information about the Key Projects of the 1959-1965 plan. Some of them are just the continuation, expansion and construction of the subsequent stages of various major projects which had already been started the years 1950-1956, and these are described by the Source from memory. Several new projects are described

[redacted] on the basis of "Directives" which were published and from press 25X1

articles about the resolutions of the Government Presidium and decisions concerning some individually listed key projects.

[redacted] systematizing these key projects, which are in most cases factories, 25X1
 [redacted] in the order which is maintained in the "List of more important 25X1
 investment projects", i.e., according to the investing industries and to the fields of national economy. Some of the projects are large combines, i.e., they embrace several industrial establishments and are included in a separate group called "Large combines". Hence the following division of this chapter:

1. Introduction
2. Large industrial combines. There are 10 of them and they embrace 40-50 large factories.
3. Coal mines

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4. Electric power plants
5. Key investments of the chemical industry
6. Key projects of metallurgical industry including mining of iron ores
7. Key projects of non-ferrous metals industry including mining of ores of non-ferrous metals.
8. Key projects of machine industry
9. Key projects of light industry, foodstuff and timber industry
10. Key projects of the building materials industry which are described more in detail because of their importance for the housing construction industry
11. Key projects of hydraulic engineering and inland waterways construction
12. Railroad construction
13. Bridging projects
14. Key tasks of general construction
15. Evaluation of the industrial plan 1959-1965

2. Large industrial combines

Industrial combines are large investment projects embracing several industrial establishments and plants which in most cases belong to one industry (e.g., Metallurgical Combine, Nowa Huta or Chemical Combine, Oswiecim) but very often factories belong to different industries (e.g., Combine Konin or Turow which embrace brown coal, electric power plants, aluminum, gas or cellular concrete).

The size and complexity characterize a combine, i.e., it is like a small industrial region by itself. Very often it requires very expensive additional installations including the construction of settlements or towns. A combine is built in stages in most cases and the entire project is drawn out through two to three Five Year Plans. For this reason this chapter contains mostly the list of combines on which construction is continued and the construction of further stages of investment projects which were started during the Six Year Plan, 1950-1955 or the 1956-1960 Plan. "New" combines will be considered as projects and the construction will start during the Seven Year Plan, 1959-1965.

The large industrial combines comprise the following 10 large investments:

Chemical combines:

1. Tarnobrazeg
2. Kedzierzyn
3. Blachownia

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4. Oswiecim
5. Plock
6. Klodawa

Metallurgical combines:

7. Nowa Huta
8. Skawina

Fuel-electric power combines:

9. Konin-Turek
10. Turow-Turoszy

Sulphur combine Tarnobrzeg

The deposits of sulphur found in the fork of Vistula and San rivers in 1953 amount to about 95 million tons, located an average 66 m below the surface in 10 m seams with about 30% sulphur content. As to its size, which is estimated at 111 million tons, the deposits are the second largest in the world after Mexico.

A small mining shaft was built in Piaseczno but the main mine will be built in Machow. The designs for the sulfur mines were made in the USSR. There are great difficulties due to supersaturation with water in the prehistoric bed of Vistula river. Further shafts are planned: in Solec^{Starý} near Szydlowiec

" Tarnobrzeg

" Grzybow

" Swianiany

It is planned to mine 400,000 tons of sulfur in 1965. Czechoslovakia is helping Poland with a 100 million ruble credit with 2% interest. The total investment outlays will during the period 1959-1965 amount to about 3,000,000,000 zlotys.

The combine will consist of:

- Sulfur processing establishment and refinery using a Polish method which was tested at first at Ogrodzieniec plant in Opole voivodship, to which the sulfur ore is at present transported
- Water purification establishment
- Sulfuric acid factory with 300,000 tons capacity in 1965
- Superphosphate factory with 400,000 tons production capacity which will be put in operation in 1961-1962
- Aluminum sulphate factory $Al_2(SO_4)_3$
- Cement plant with production based on floatation waste

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- Expansion of the existing ceramic factory in Chmielow with production based on argillaceous earth accompanying sulfur ores
- Sand, gravel, and cement factory
- Sulphate medical treatment establishment

Poland expects that it will save on foreign currency needed for import of sulphur during the period 1959-1965 about 12 million dollars and during the period 1959-1970 about 22 million dollars.

Chemical combine Kedzierzyn

It produces fertilizers. The first stage of construction 1955 completed

The second " " " 1960 expected to be implemented

The third " " " 1965 expected to be implemented

It is expected that it will finally reach 800,000 tons production capacity of fertilizers with 20% contents of pure nitrogen. The combine embraces:

- Nitrogen plant, first stage completed, started production in 1957 of 120 tons of ammonia (NH_3) in 24 hours. Its yearly production of fertilizers with 20% pure nitrogen is 160,000 tons. The second stage of construction implemented and started production in 1958 of double the amount of the first stage with the total amount 320,000 tons of 20% fertilizers.
- Saltpeter plant started production in 1957-1958 producing 750 tons of granulated saltpeter in 24 hours
- Urea plant which produces since 1957 about 5000 tons in 24 hours
- Electric power plant with about 100MW capacity

The above listed plants are to be expanded up to 600,000 tons production capacity of fertilizers with 20% content of pure nitrogen in 1965.

Chemical combine Blachownia

It is built on the grounds of a German synthetic fuel plant which was completely dismantled by Soviet army in 1945. Up to mid-1959 the following were put in operation:

- A coke plant distilling pitch and processing benzol
- A factory producing the raw product for artificial fibers (Polish name TERYLEN); other petroleum products are also planned.

The total cost of investment for Blachownia combine during the period 1959-1965 will amount to 1.5 billion zlotys.

The existing electric power plant will be expanded from the present 110MW to 200.

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~~CONFIDENTIAL~~Chemical combine Oswiecim

The construction started in 1945. The next stage of synthetic rubber (so called BUNA) factory, a part of which was put into operation in 1959, is under construction. The construction of synthetic rubber factory composed of 55 buildings with the total enclosed space of 800,000 cubic meters was started in 1955 and it will cost about one billion zlotys. The equipment and machinery from East Germany and USSR. The factory will cover the domestic need for rubber in 1962 and after this date it will start exporting. The chemical combine Oswiecim is composed of the following plants:

- Carbide plant, equipment from USSR, already in production
- Poly-chloroethylene plant which is already working with production capacity of 6,700 tons yearly and in 1960 will produce 13,400 yearly
- Synthetic fuel plant which is not to be expanded further because it is too expensive
- Synthetic rubber factory with synthetic alcohol plant, styrene and ethylene plants
- Heat and electric power plant with 72 KW capacity which will have 100 KW in 1960

Petroleum chemical combine Plock

This is regarded as the largest new investment project during the Seven Year Plan 1959-1965. Construction will start in 1961 and its first stage will go on to 1968 for a total cost of nine billion zlotys.

The design and machinery will come from the USSR. The project will be built according to a decision of the Council for Economic Mutual Assistance (CEMA) taken in April 1959 in connection with the construction of a pipeline for crude oil from the USSR to East Germany.

This pipeline runs from oilfields near Kuybyshev on the Volga river valley through the Federal Russian Republic and Northern Ukraine, crossing the rivers Volga and Dniepr. The pipeline divides on the territory of Belorussia into northern and southern lines. This pipeline runs through 700 km on Polish territory; its entire length is 4,500 kilometers. The northern part of the pipeline goes through Poland to East Germany and the southern to Hungary and Czechoslovakia. The pipeline will cover the requirements for crude oil of the four mentioned satellite countries and besides that it will permit the processing of part of the crude oil for petroleum-chemical products. According to the article by C. Kulik in Trybuna Ludu, on

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31 August 1959, the transportation of crude oil through the pipeline will be five times cheaper than by railroad tank cars and will replace about 50,000 of them.

The northern pipeline of 50 cm diameter will pass through Plock to a border village Krajniki where it will enter to Schwedt in East Germany (about 60 km south of Szczecin). East Germany will receive 4.8 million tons of crude oil yearly and Poland also a few millions, but less than East Germany. The pipeline will be built at a rate of three kilometers daily; therefore, the construction will be completed during four years. Every 100-200 km a pump station with 8 tons per minute capacity will be built.

The petroleum combine in Schwedt will produce, according to plan, in 1963 about 1.25 million tons; and in 1967, 8 million tons of various products from crude oil pumped from the USSR and from its own oilfields in East Germany. The Polish petroleum combine in Plock will employ 10,000 workers.

[redacted] the approximate cost of the construction of the 25X1

pipeline will be as follows:

| | |
|---|----------------------|
| 1 km of pipes of 50 cm diameter including laying of pipes | |
| in 1956 prices | 1,940,000,000 zlotys |
| in 1959 prices | 2,700,000,000 zlotys |

Altogether 700 km of pipeline, in 1956 prices, 1,890,000,000 zlotys

Six pump stations, 60 million zlotys each, 360,000,000 zlotys

Total cost of the whole project in Poland in
1959 prices, approximately 2,250,000,000 zlotys including
expropriation of land, actual laying of pipes, earthwork, all additional work such
as welding joints, insulation, building expansion chambers, culverts, etc.

The cost of the petroleum combine in Plock in 1959 prices will amount to about
8,000,000,000 zlotys.

Mining-mineral combine in Kłodawa

Potassium and salt deposits were discovered in the Kłodawa area, estimated at five million tons of potassium and 50 millions tons of salt. The deposits of salt stretch from Kłodawa through such localities as Wapno-Lubien to Inowroclaw where salt has been exploited for many years.

The construction of the combine was started already in 1955 but went very slowly because there were difficulties in construction of the shafts, and besides there were also doubts as to whether the whole project would be profitable. Finally, in 1959, it was decided to speed-up this construction project. Kłodawa was listed

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as a key investment although it never had priority. During the next Five Year Plan, 1961-1965, it has to be built quickly because of the shortage of potassium fertilizers in Poland. At the same time edible salt will be exploited, and a new industrial district Kłodawa will be created.

Lenin Metallurgical Combine in Nowa Huta

Construction started in 1949. Today, in 1959, it is producing 1,370,000 tons of steel, and embraces:

- Three furnaces with a total production of 1,340,000 tons of pig iron
- Two agglomeration plants
- Steelwork with eight Martin smelting furnaces, each of 370 capacity, with a total annual production capacity of 1,500,000 tons of steel.
- Rolling mill with a crusher (hot rolled)
- Rolling mill for "cold" rolling of metal, which was put in operation in 1959
- Iron foundry
- Steel foundry
- Six coke batteries with a coke-chemical plant
- Fire-proof materials factory
- Steel constructions workshop

During the years 1949-1958, a total of 8.2 billion zlotys was spent for the metallurgical combine only, without counting the outlays for auxiliary constructions such as roads, railroads, Nowa Huta town for 100,000 inhabitants, etc.

The construction plan for 1959-1965 foresees the construction of:

- Blooming mill for rolling large blocks
- Rolling mill for small profiles
- Zinc coating shop
- Transformer sheet rolling mill
- New Steelwork with blown converter of 800,000 tons capacity and an additional two Martin furnaces in the steelwork
- Preheated tube (pipe) plant will be put into operation in 1960 and a stretching plant for precise pipes in 1965
- Tin plating plant
- Department for improving iron sheets
- Three further furnaces of about 1,680 cubic m capacity each
- Increase of the existing coke batteries from six to sixteen

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The cost of these investments will amount during the period 1960-1965 to 10 billion zlotys. Besides, 150,000 tons of machinery and equipment which will be installed and 135,000 tons of steel construction for assembling working halls.

Auxiliary installations include:

- Expansion of the railroad station Ruszcza to 100 trains daily passing capacity, i.e., about 30,000,000 tons annual loading capacity.
- The entire railroad junction Nowa Huta will be electrified. The sector Batowice -- Nowa Huta was already implemented and given for use in 1959.
- Further expansion of the town Nowa Huta.

The combine will finally reach a capacity of 3,500,000,000 tons of steel which will represent 30% of the total production of steel in Poland.

Aluminum combine in Skawina

This metallurgical combine includes an aluminum factory with a production capacity of 20,000 tons and construction of electric power plant, which will be further expanded to 550MW.

The production of aluminum will be increased and reach about 35,000 tons in 1961. During the second stage of construction, a second aluminum plant will be built with a production capacity of 20,000 tons of metallic aluminum.

In addition a cellular concrete factory will be built and the 110 km long Skawina - Vistula river canal which was started in 1957 will be finished.

Konin - Turek combine

The deposits of brown coal in the Konin area amount to 591 million tons and in the Turek area, but very far from Konin, they amount to 267 million tons.* Therefore, a new large industrial-electric power district is coming into being which embraces the following industrial centers:

- Konin-Goslawice brown coal mine and electric power plant of which the of which the first stage of 200 MW is already completed and the second stage up to 435 MW under construction
- Electric power plant in Patnow based on brown coal will have in 1965, 480 MW

* Besides that, there are deposits of brown coal in the Turow-Turoszow area of about 1.15 billion tons and the lately discovered deposits of brown coal in Gubin, Trzciianka and Rogozno which are still being studied by geologists are estimated to amount to 1.0 billion tons. The total estimated deposits of brown coal in Poland amount to about 3 billion tons.

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- Electric power plant with 480 MW capacity and brown coal mine in Adamow
- Open cast brown coal mine in Wladyslawow. Both the Adamow and Wladyslawow brown coal mines will produce 4.2 million tons yearly
- Aluminum foundry in Turek with 35,000 tons production capacity in 1965
- An aluminum oxide factory and a ceramic establishment, as well a gas concrete factory are also planned

The first set of turbines of 120 MW capacity will be put into operation in 1963.

Design and coal cutting machines come from East Germany, electric turbines are of Polish production.

Electric power combine Turow-Turosow

It embraces the region of Zgorzelec, Bogatynia, Turow-Turoszyne, Zytawa and Trzciniec, with large deposits of brown coal estimated at about 1,158,000,000 tons.

In Trzciniec a power plant of 1,200 MW capacity will be built to produce about seven billion kilowatt hours yearly. The entire fuel-electric power combine will embrace about 32 square kilometers. At present a road Zgorzelec-Bogatynia, and a dam on the river Witka are under construction. The dam will form a water reservoir with five million cubic meter capacity.

The combine is built according to a bilateral Poland-East German agreement and East Germany is giving a loan in the form of construction machinery and documentation. The electric current will be transmitted to East Germany. The agreement signed on 17 April 1957 in Berlin includes a credit of 400 million rubles at 1.5% interest which will have to be repaid five years after delivery of each machine. East Germany will deliver: dragline excavators, multibucket excavators, power shovels, excavators on wheels, ditch diggers, 100 ton electric bulldozers, ^{traverses,} transportable transformers, transportable units for electric power production, tunnel and drift mining machinery, loading equipment, belt transporters, small railroad cars and motor-driven workshops. Besides that, East Germany will supply an assembly crew and documentation prepared by the Designing Bureau NKD "Kohle". Later it will send engineers and mining machine operators and will employ Polish designers at the designing bureau in Berlin "Kohle".

Poland will repay this loan with the following goods: profile iron, iron sheets, steel pipes, steel wire ropes, forgings, ball bearings, cables. This agreement is

Remark: It does not pay to send the electric current from Turow inland to Poland because the power plant is far away from industrial centers. The German electric power plant uses Polish brown coal from Tuszow and is sending electric current necessary for the construction of the combine.

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very burdensome for Poland because almost all of the above mentioned goods are in the category of deficit materials. Besides Poland will supply electric current, water, and four million tons of coal and some coke.

It is planned to expand the mines to 17 million tons in 1965 and eventually to 27 million tons production capacity of brown coal yearly. Poland will have to invest at least one billion rubles.

3. Coal Mines

There are at present 82 coal mines in Poland of which seven were constructed after WW II and they are being further expanded:

| | |
|-----------------|-----------------------------|
| Wesola | Nowy-Wirek |
| Ziemowit | Halemba |
| Kosciuszko-Nowa | Porabka (located in Zagorz) |
| Julian | |

As a result of the construction of the above mentioned coal mines and expansion of heading and gallery construction and new levels in the remaining coal mines, the mining of coal increased during the years 1951-1955 by about 15.2%, later on during 1956-1958 period it remained almost at the same level (in 1958 about 95 million tons) and in 1959 mining again increased. The planned production for 1959 is 98 million tons.

This stagnation in coal production forced the government to increase the investments for coal mining. These investment outlays will be 37% higher in 1965 than in 1958. At present in 1959 the following six new deep coal mines are under construction:

Staszic, which will be put into operation in 1964 with a yearly production of 400,000 tons, but to reach 3.5 million tons yearly in the future; Radoszowy, to be built by 1965 with a daily production of 7,000 tons; Jastrzebie, coking coal mine in the Rybnik coal district, which will start production in 1963 with a planned output of 6,000 tons in 24 hours; Moszczanica, similar to Jastrzebie, will produce in 1963/1964 also 6,000 tons daily; Mszana, where a daily production of 5,000 tons is foreseen in 1963/1964; and Zofjowka, in the Rybnik coal district.

As a result of these investments and new opencast coal mines, and the expansion of old coal mines, the production of coal will increase in 1965 to 112 million tons.

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Besides that, during the years 1961-1965 a further seven deep coking coal mines will be built, six of which are in Rybnik coal district; two of them already located one in Borynia and another in Leszczyn, will be started in 1963/1964 and production is expected in 1969, because the construction of deep coal mine requires from six to eight years. The construction of opencast coal mines will be started also in Silesia, in Krakow and the new Lodz district in such places as Uniejow, Poddebice, Rogozno, and Leczyca. Further opencast coal mines are under construction in the Walbrzych basin. A fifth opencast coal mine and the largest of all up to now, was put into operation in 1959 in Czarny Bor in Kamienna Gora district under the name Wladyslaw. Until now 50 tons are mined in 24 hours and, according to Trybuna Ludu, 9 September 1959, page 7, this coal mine will reach in 1960 the planned production of 300 tons in 24 hours. Altogether the construction of about 30 opencast coal mines is foreseen during the years 1959-1965.

4. Electric power plants

Since WW II, during the years 1945-1959, the following 20 power plants were put into operation; 14 of which are in the general electric system (Zawodowe) and the remaining six, marked*, are factory owned (elektrownie zakladowe, przyfabryczne):

| | |
|----------------------------|-----------------------|
| Miechowice | Stalowa Wola* |
| Dychow | Czechnica |
| Jaworzno I and Jaworzno II | Kedzierzyn* |
| Zeran | Tarnow* |
| Elblag | Nowa Huta* |
| Bielsk | Skawina |
| Poznan II | Oswiecim |
| Lodz II | Pomorzany in Szczecin |
| Legnowo* | Blachownia |
| Ostroleka | |

Of course, on several of them the construction of further stages continues because "putting into operation" only means that the first electric current started to flow, but the investment project is not yet implemented.

During the same period 150,000 km of high tension transmission lines were built. The capacity of all electric power plants in Poland amounts, in 1959, to 5,600 MW and the production 24 billion kilowatt hours (kwh) yearly. The consumption of coal for the production of one kwh dropped from 796 grams in 1949 to 495 grams in 1959. The use of electric power for one inhabitant amounted in 1958 to 840 kwh.

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During the current Seven Year Plan 1959-1965, besides the expansion and implementation of electric power plants listed above, construction of the following 11 key electric power plants (three of them were already mentioned because they started production in 1959 on a small scale; Blachownia, Pomorzany and Skawina) is foreseen:

- Turow with 1,200 KW capacity, will be the largest power plant in Europe;
- Adamow (already mentioned by description of the combine Konin) will be put in operation in 1963, and after final implementation will reach in 1967, 480 to 500 MW;
- Konin-Goslawice will produce 120 KW in 1959 and will later be expanded to 435 KW;
- Patnow will produce 480 KW in 1967;
- Skawina, which is already working, will be further expanded to 550 KW;
- Blachownia, put into operation in 1959 at 110 MW, will be expanded to 200 MW;
- Siekierki Warszawa heat and power plant, the construction of which started in 1959. The first current is expected to flow in 1961 and the first stage with 100 MW will be ready in 1963, the next stage of 200 MW in 1965. The design and machinery is 90% Polish;
- Siersza II with a retaining dam on the river Kozia Brodka; the construction started in 1959, it will have a 150 m high smokestack, the highest in Poland;
- Lagisza II
- Halembie

All three electric power plants Siersza, Lagisza and Halembie, belong to a joint project of electric power development in Silesia.

- Pomorzany in Szczecin, continuation of construction to 120 MW.

After these new electric power plants are put into operation, the total national capacity will amount to 10,000 MW and production to 45 billion kwh in 1965.

The new electric power plants are to great extent based on brown coal. During the years 1959-1965 the production of electric power will increase by 84%. The present share of brown coal will increase from 6% to 28.5% and the use of pit coal only by 8%.

Thermal electric power plants are less expensive to build than hydroelectric power plants. With the current construction projects of the thermal electric power plants one MW costs 3.5 million zlotys in investment. The increase of 4,400 MW

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during the period 1960-1965 will require 15.4 billion zloty outlays for electric power plants only, without the accompanying investments which represent about 20%. The program of hydroelectric power plants was postponed. A plan of an atomic electric power plant to be built in the future is being discussed, but neither the date nor location is decided yet. Instead it was already decided to build the second atomic reactor. It will work on enriched uranium, cooled with hydrogen with a graphite moderator and will be assigned for research in radiation chemistry, nuclear engineering and reactor materials.

5. Key Chemical Industry Investments

Besides the previously mentioned chemical combines Tarnobrzeg, Plock, Kedzierzyn, Oswiecim, Blachownia and Klodawa, the following investments are included as key investments of the chemical industry:

Nitrogen Establishments in Tarnow

This is an expansion of the prewar nitrogen factory in Moscice near Tarnow. In addition to the nitrogen factory, the production capacity of which was tripled a new plant for the production of by-product for artificial fibre "steelon" under the trade name "kaprolaktan" was built and put into operation in 1958, but is being expanded to a production capacity of 4,000 tons yearly. Documentation was bought in East Germany. In addition, a large electric power plant was built which has at present 50 MW capacity and will be further expanded to 200 MW. Documentation and equipment imported from USSR.

"Rokita" Organic Industry Establishments in Brzeg Dolny

It is an expansion of a pre-German chemical factory. The following plants are under Construction:

- Chlorobenzene plant which has been expanded.
- Chlorine plant. The first stage is already completed, the second will be finished in 1959, the third in 1963. After the implementation of the third stage the production will be as follows: 18,000 tons chlorine
18,000 tons hydrogen
20,000 tons caustic soda
- Cyclohexanol plant (an initial product for the above mentioned "kaprolaktan" at the Nitrogen establishments in Tarnow) with a present yearly production of 4,100 tons; the second stage is under construction.
- Phenol plant which has been in operation since 1955 and at present is being expanded.

Phenol Factory in Legnowo

This is a reconstruction and adaptation of a factory which was constructed for

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the armament industry during the years 1951-1956. This factory has been at least partly reconstructed for civilian production with 13,000 tons yearly production capacity of Phenol. The construction of this factory cost about 100 million zlotys.

Sodium Establishments in Janikowo

Construction began in 1952 but stopped in connection with the diversion of funds to armament factories Legnowo and Rokita in 1953. In 1954, the construction started again and the first stage was put into operation in 1957 with the production capacity of 140,000 tons of soda yearly. The next stage is planned for completion in 1959/1960 with the yearly capacity of 300,000 tons. The design and machinery imported from USSR.

Rubber Establishments in Debica

The factory is already in operation but is being further expanded. The cost of construction through mid-1959 amounted to about 600 million zlotys. It is planned that a yearly production of 41,000 tons of rubber products will be reached in 1960. The quality of products is still unsatisfactory. Source added that the factory manufactures poor rubber tires.

Artificial Fiber Establishments in Gorzow

The factory produces about 500 tons of "steelon" yearly. In 1965, the production will reach 10,000 tons of steelon and orlon which is a new Polish artificial fiber manufactured on the basis of poly-acrylic-nitro (poli-akrylo-nitrol in Polish ?).

Artificial Fiber Factory in Torun

The construction started in 1959. It will produce artificial fiber "Elana" on a basis of "terylene?", and in 1965 the production will amount to 7,000 tons.

Carbonic Electrodes Factory in Bieganice

The construction will start in 1960.

Artificial Fiber Factory in Wloclawek

The construction will start in 1960. It will produce viscose fiber.

Artificial Fiber Factory in Szczecin

The factory started production in 1957 but is being further expanded. Among other products, it produces cord yarn for tires.

Traction Tire Factory in Koszalin

In 1963, it will employ about 2,500 workers.

Synthetic Products Factory in Olsztyn

The construction will start in 1961 and the factory will employ about 1,500 workers when completed.

During 1961-65 a total of 30 billion zlotys will be invested in the chemical industry. Half of this sum will be spent on the six largest projects, i.e., Plock,

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Kedzierzyn, Oswiecim, Blachownia, Tarnow and Tarnobrzeg. As a result of these investments the production of **basis** chemical products in 1965 will amount to:

| | |
|----------------------|------------------------------|
| Sulphur | 410,000 tons |
| Sulphuric acid | 1,140,000 " |
| Caustic soda | 255,000 " |
| Sodium carbonate | 660,000 " (soda kalcynowana) |
| Synthetic products | 185,000 " |
| Nitrogen fertilizers | 480,000 " of pure nitrogen |
| Rubber | 45,000 " |

6. Key Projects of Metallurgical Industry and Mining of Iron Ore

In addition to plants of the Nowa Huta steelworks previously described in section two, "Large industrial combines," the following investment projects are most important in the metallurgical industry:

- Bierut Foundry in Czestochowa. By mid-1959 two billion zlotys had been invested in construction of the foundry itself, not counting various auxiliary establishments. A new coke plant is already under construction; expansion of other departments at a cost of 10 billion zlotys is planned during the period 1959-1967.
- Refined Steel Foundry in Warsaw. The construction had already started in 1954 and completion is planned for 1965. The total cost of construction will be ^{about} $3\frac{1}{2}$ billion zlotys.
- Kosciuszko Foundry in Chorzow. It is a prewar foundry and expansion is under way. After WW II furnace "A" (the only one from prewar) was modernized and two additional furnaces were built. At present a converter steel plant with oxygen blowers with one million tons production capacity is under construction.
- Batory Foundry. It has been modernized and expanded since WW II. At present the construction of thick sheet rolling mill mainly for shipbuilding industry has been started.
- Nowotko Foundry in Ostrowiec. Construction of the largest press in Poland (6,000 tons power) has begun. This forging press will produce 20,000 tons of forgings yearly.
- Stalowa Wola Foundry. Expansion and completion under way.
- Bobrek Foundry, Baildon Foundry and Pokoj Foundry will be expanded.

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- Iron Ore Depot in Burki-Maczki. It is a central iron ore depot for Silesia with its own agglomeration plant and defrosting installation for iron ores. Construction began in 1957 and completion is planned for 1961. The total cost 1.5 billion zlotys.

These new investments will increase the production of steel up to nine million tons in 1965. The production of steel in 1958 was 5,630,000 tons, i.e., an increase of 60%; in 1960 it is planned to reach 6,400,000 tons.

Iron ore mines

During the years 1961-1965; it is planned to complete the construction of six iron ore mines which are at present under construction in Czestochowa, Leczyca and Kowary iron ore basin.

- Iron ore baking plant in Sabinow near Czestochowa -- Expansion and completion.
It will produce enriched mixture as batch for furnaces.
- Ameliorated iron ore plant in Zebce near Starachowice. Construction will be finished in 1961; it will produce 400,000 tons of high class 90% enriched ore from iron sands yearly.

The investments in ore mining are made in order to increase the present production of 2 million tons to 2.5 million tons in 1965, which is not very much. Geological studies and drillings have not been very successful. The Polish metallurgical industry depends on imported ores. The import of iron ores amounted to 281 million rubles in 1958, i.e., about 5% of the total Polish import. Jedrychowski stated during the III Party Congress in 1959 that the cost of equivalent import of rolled iron products which Poland will produce from these ores would cost about 1,755 million rubles.

7. Key Projects of Nonferrous Metals Industry and Mining of Nonferrous Metals

In connection with the discovery of copper deposits in Glogow area a further development of copper ore mines is planned in the old copper basin Boleslawiec-Zlotoryja and in the new basin which will be built in the Glogow area, regarded as the richest deposit in Europe.

In the old basin the following mines are to be expanded:

| | |
|--------------|----------|
| Lena | Iwiny |
| Konrad | Lubichow |
| Nowy Kosciol | |

Their total production is at present 2.5 to 2.8 million tons of copper ore yearly. The deposits will last for 50 years and supply about 13,000 tons of concentrated copper.

In the new basin the construction of the copper mines Lubin, which will employ

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5,000 workers, and Glogow has been started but they will not be finished until 1970. They are difficult to exploit because they have a 450 meter water-bearing stratum.

The Henryk Walechi copper foundry in Legnica, begun in 1952, started its first production in 1959. This establishment has the following plants:

- copper foundry
- copper electrolysis department
- sulphuric acid factory
- thermal electric power plant
- auxiliary installations

with a total of 700,000 cubic meters of buildings. Further expansion is to lead to a processing capacity of 35,000 tons of copper by 1965, which is sufficient for processing of ores mined in the old basin. The new basin will not be in operation in 1965 and for this reason Poland will still have to import copper. At present about 30 million dollars are spent yearly to import copper and this amount will gradually increase to 50 million dollars during the years 1965-1970.

The construction of a new Zinc Foundry in Miasteczko Slaskie will start in 1960 and be completed in 1965 (the first stage) using a new Polish method for obtaining zinc from calamine ores by enrichment in 70 meter rotating ovens. The Polish method consists of removal of sulphur from calamine by an inexpensive process. Zinc oxide and concentrates will be obtained from calamine. Six foundries and electrolytic departments of zinc as well as four lead foundries are in operation in Poland. Production in 1958 amounted to 162,500 tons of zinc and 35,000 of lead. For 1965 it is planned to produce 215,000 to 230,000 tons of zinc and 52,000 tons of lead.

The development of a Zinc Foundry in Boleslaw, built after WW II, is still in process.

The construction of a new mining enterprise for zinc is under way, but the location is not known.

Modernization of old establishments by introduction of new annealing furnaces for producing of floatation blend is planned. This permits the use of old piles from the past which contain about 6% of zinc in the Olkusz-Boleslaw basin, and the extraction of lead, zinc, and cadmium.

Zinc-lead mine in Trzebionka. This is an old mine located in Olkusz-Chrzanow basin which was flooded and not used for many years. It was put into operation in 1959 and expansion continues.

Zinc-lead mine Silesia. This mine is ~~endangered~~ by the mining of coking coal below. At present some work to secure the mine is under way which will permit exploitation of this mine at least to 1961/1962.

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Aluminum rolling mill in Kety. Construction was approved by the Economic Committee of the Ministers Council in 1959. The construction will start in 1960 and be completed in 1964/65. The mill will process aluminum from the aluminum foundry in Skawina and from the new foundry in Turek and aluminum alloys.

Geological Research and Test Drillings

The Polish geologists succeeded in finding: sulphur, gypsum, copper, potassium, apatite, kaolin, zinc, lead, coking coal, natural gas, fireproof clay and brown coal deposits. However, they were unsuccessful in finding crude oil and iron ore.

One billion zlotys are allocated yearly for geological research and test drillings, and geological research is always classed as a key investment.

8. Key Construction Projects of the Machine Industry

Tractor Factory Ursus in Warsaw. A great expansion of this factory is planned at the cost of 840 million zlotys during the years 1959-1967 to build production capacity to 36,000 tractors. Present production capacity is 8,000 - 10,000 tractors. Among others, a great foundry plant will be put into operation in 1964 for 20,000 tons of castings.

Tractor Factory in Andrychow; expansion to 5,000 tractors production capacity in 1965 at a cost of 240 million zlotys.

Light Tractors Factory (8 HP) in Gorzow to a production capacity of 2,000 tractors at a cost of 70 million zlotys.

Locomotive Factory Fablok in Chrzanow. Expansion to double the present production capacity in 1964.

Truck Factory in Lublin. Completion of this large establishment.

Truck Factory Star in Starachowice. Further expansion in connection with the production of heavier types of trucks (7 tons) and special trucks so-called military terrain motor vehicles similar to the American jeep.

Lower Silesia Electric Machinery Plant M-5 in Wroclaw. Expansion of a department for electric generators to build 50 MW turbogenerators, 120 MW, and in the future 250 MW, ~~hydro~~ generators cooled with hydrogen.

Transformer Factory in Lodz. Construction starts 1959, to be completed in 1965.

Electronic Enterprise Toral in Torun. A new factory for radio vacuum tubes. Construction starts in 1959, and completion is to be in 1963/1964.

Television Lamp Factory in Iwiczna near Warsaw. The Construction started in 1957; further expansion to 1964.

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Turbine Factory in Elblag. Further expansion for production of turbines and hydrogenerators of 25 KW capacity.

Boilers Factory in Raciborz. A big expansion for production of high pressure boilers, mainly for electric power plants.

Electric Distribution and Switching Equipment Plant in Namyslow in lower Silesia employing 1,500 workers.

Television Sets Factory in Wroclaw, employing 1,200 workers.

Electric Transmitters Factory in Zielona Gora, employing 1,000 workers.

Electric Apparatus Factory in Zielona Gora; continuation and completion of construction.

Boilers Factory for Central Heating in Nowa Sol in Zielonogora voivodship continuation and completion of construction project.

Ball Bearing Factory in Poznan. This will be the largest postwar investment project in Poznan. The construction will start in 1959, be completed in 1966.

Machine Factory for Cement and Ceramic Plants in Bydgoszcz; a large expansion of the existing Pomerania Machine Industry Enterprise; new production halls of 330,000 cubic meters, the construction of which started in 1959 and will be put into operation in 1961 and produce 20 new types of machinery for cement, gas-concrete, mineral, and ceramic industry plants.

Dry Dock in Paris Commune Shipyard in Gdansk for building ships of 65,000 GRT at a cost of 460 million zlotys. Start in 1959; completion in 1962. Polish design by Designing Bureau Prozamet.

Shipyard in Szczecin. Expansion to increase employment to 2,500 persons.

Agricultural Machines Factories: Expansion of factories in Kutno, Strzelce Opolskie, and Starosielce near Poznan.

~~X-ASV~~ Machine Tools Factory in Opole, which will employ 3,000 persons.

Construction Machinery Factory in Jasien in Zielonogora voivodship.

The directives for the 1961-1965 plan call for a 70-73% increase in investment outlays for machine industry in comparison with the 1956-1960 period; emphasis is on the following branches:

- a) Expansion of tractor industry. Production should reach about 40,000 tractors in 1965.
- b) Expansion of the automobile industry to 35,000 trucks, in 1965 and 3,700 buses.
- c) Electric machinery industry; and high pressure boilers for the production of large turbines of 120 MW in 1965.
- d) Expansion of electronic industry; the production of which should be in 1965, 3.4 times greater than in 1958.

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- e) Expansion of machine tools industry. The production of 180 new types of machine tools for metal and 25 new machine tools for wood will be started.
- f) Expansion of shipping industry. Fifteen new types of ships with combustion engines will be built, and the size of ships produced in Poland has to reach 65,000 GRT.
- g) Expansion of production of locomotive and railroad cars. A universal electric locomotive with 140 km/hour velocity (Bobo type) will be produced. Combustion engine locomotives with 1,600 HP, and several types of railroad passenger, freight, and motor cars will be produced.

The rolling stock industry supplied in the past years:

1951-1955 railroad cars calculated 35,763 dual-axel cars for the state railways, besides export.

- h) Development of agricultural machines industry. Besides new types of tractors, new harvesting combines for grain, potatoes and for beet root will be produced.

According to the resolution of the PZPR Plenum in June 1959, an additional 500,000,000 zlotys was allocated for development of agricultural machines industry which will have to supply during the years 1959-1965:

| | |
|---------|------------------------------------|
| 95,000 | sheaf binding harvesters (reapers) |
| 49,000 | potato digging machines |
| 68,000 | threshing machines, motor driven |
| 48,000 | fertilizer sowing machines |
| 100,000 | grain sowing machines |

Besides other branches of the machine industry will supply:

| | |
|---------|------------------------------------|
| 286,000 | combustion engines for agriculture |
| 60,000 | electric motors |

Altogether during the years 1959-1965, agriculture will receive agricultural machines worth 19 billion zlotys which replace 300,000 horses. In addition, the land improving machine industry will have to be expanded (in fact created from the beginning) at a cost of 180 million zlotys in order to produce ~~to~~ in 1965:

| | |
|-----|------------------------------------|
| 600 | deep digging (dredging) machines |
| 680 | ditch scraping (cleaning) machines |
| 440 | drainpipe excavators |
| 120 | multibucket shovels |

- i) Development of construction and building materials machine industry. Complete equipment and installations for cement plants, for gas-concrete plants, ceramic

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enterprises, silicate, lime, and gypsum plants are to be produced plus new types of power shovels, tower cranes, and construction machinery and equipment for finishing work.

j) Development of mining machine industry. New types of coal cutters, loading equipment, and mining combines will be produced.

k) Development of consumer type machine industry in order to produce in 1965:

| | |
|-----------|------------------|
| 600,000 | washing machines |
| 240,000 | refrigerators |
| 300,000 | motorcycles |
| 1,000,000 | bicycles |

and supply sufficient number of radio and television receivers.

l) Development of machine industry for factories manufacturing such as felt plates for flooring and artificial wood plates for lining interior walls for the paper, textile, and foodstuff industries.

The development and expansion of the machine industry is planned not only for domestic needs but also for export of machines and complete industrial installations.

9. Key Projects of Light, Foodstuff, and Timber Industry.

- Textile Factory in Fasty. It is already working but new departments are still under construction. The factory ~~in~~ Fasty is in fact a textile combine.
- Textile Factory in Andrychow. Further expansion.
- Spinning and Weaving Mill in Koscierzyna employing 1,500 persons.
- Textile Factory in Zgierz
- Cotton Spinning Mill in Lidzbark Warminski
- Cellulose Factory in Wloclawek
- Cellulose Factory in Ostroleka
- Sugar Factory in Hrubieszow and in Werbkowice
- Meat Processing Combine in Zeran/Warsaw
- Fruits Processing Combine in Klemensow
- Shaving Plates Factory in Zielona Gora district with 42,000 cubic meter production capacity.
- Artificial Wood Plates Factory (Fabryka Plyt Spilsnionych) in Czarna Nida near Ruciany. Further expansion.

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- Artificial Wood Plates Factory in Zielona Gora district with 300,000 tons production capacity.
- Artificial Wood Plates Factory in Szczecinek with 42,000 cubic meters production capacity.

10. Key Projects of the Building Materials Industry

The investments of building materials were given priority and several projects were listed as key projects.

Cement Plants:

Cement Plant Wierzbica. Expansion from the present production capacity of 150,000 tons to 800,000 tons in 1960 and 1,000,000 tons in 1961. In 1961, this will be one of the largest cement plants in Europe;

Cement Mill Zeran was put in operation in 1959, and will be further expanded up to 450,000 tons in 1960;

Cement Mill Nowa Huta. First production started in 1959 but construction will only be completed in 1960/1961 when it will reach 800,000 tons production capacity. Next stage includes the construction of a clinker plant and the increase of production to 1,000,000 tons in 1963. It will then become a cement plant. New Humboldt kilns will be built;

Cement Plant Rejowiec I and II. Third stage of construction will add yearly an additional 120,000 tons to each;

Cement Plant Odra. Expansion from the present 375,000 tons to 525,000 tons in 1961;

Cement Plant Chelm. First stage of construction will be implemented in 1960 with 450,000 tons production capacity; expansion to 800,000 tons in 1964;

Cement Plant Wiek II. Completion in 1960 to 650,000 tons production capacity of clinker.

The construction of the above cement plants will last from two to four years and, in principle, should be built by 1960/1961.

Construction of new cement plants: Nowiny near Kielce during the years 1961-1965

| | | | |
|-----------------------------------|---|---|---|
| <u>Konin</u> at the Konin combine | " | " | " |
| <u>Tarnobrzeg</u> at Sulfur | " | " | " |
| <u>Rudniki-Czestochowa</u> | " | " | " |
| <u>Dzialoszyn</u> | " | " | " |
| <u>Dobrzyn</u> in Opole | " | " | " |

Expansion of old cement plants and increase of production by 100%:

Wysoka

Saturn

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Modernization of old cement plants and increase of production by 10 - 20%:

Groszowice

Szczakowa

Wejherowo

Piast in Opole

Pszemko in Szczecin

Podgrodzie in Opole

To illustrate the entire program of development of cement industry in Poland

after WW II the Source gave the following data:

The production of cement amounted before WW II to:

1,300,000 tons in 1937 within the former boundaries

2,500,000 " " " present "

300,000 " directly after WW II in 1945

2,350,000 " after reconstruction in 1949

During the years 1945-1955, the following new cement plants were built:

- Odra 375,000 tons

- Wierzbica 345,000 "

- Pokoj II 320,000 " (Rejowiec II)

- Groszowice 120,000 " new kiln

Altogether to 1955 the production was increased by 1,160,000 tons.

During the current five-year plan, 1956-1960, the following production capacity will be added:

Warsaw Zeran 450,000 tons

Nowa Huta 700,000 "

Wiek II (650,000) " (This 650,000 tons should not be counted because this plant supplies clinker to the cement mills Zeran and Nowa Huta, which is included in their production.)

Expansion of Pokoj
an additional 120,000 "

Odra 150,000 "

Wierzbica 455,000 "

Construction of Chelm 450,000 " first stage

Total increase of 2,325,000 "

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Besides that, during the years 1945-1955 there was an increase of productivity in old cement plants by about 10%, and a further increase is foreseen during the years 1956-1960, of additional 10%.

On this calculation the 1960 production plan of 6,700,000 tons of cement is based. For comparison: in 1958, 5,040,000 tons were produced and it is expected that production in 1965 will reach about 10,000,000 tons of cement. The program of development of cement plants is one of the best prepared, but 1-2 years delay can be expected. The modernization is aimed not only to increase the quantity of cement but also production of new categories of cement. At present the following types of cement are produced:

| | | | |
|---------------------|-----|---------------------------------------|-----|
| Portland cement | 250 | Road and airfields cement | 450 |
| Construction cement | 350 | Rapid hardening cement | 400 |
| Slag cement | 250 | High quality cement in small quantity | 500 |
| Masonry cement | 150 | Expanding cement in small quantity | |

Lime Kilns

No new lime kilns are to be built; the following existing plants are to be expanded and modernized: Piechcin, two modern continuous (rotating) kilns are to be built; Gorazdze; Wojcieszow; Strzelce Opolskie; Wapienna; and Plaza.

Altogether the following are under construction:

| | |
|-------|--|
| 10 | normal shaft kilns |
| 3 | continuous (rotating) kilns |
| 3 | automatic shaft kilns |
| Total | 16 kilns with a total production capacity of 440,000 tons. |

Besides that, during the 1956-1959 period 16 small shaft kilns were given for use, having a total production capacity of 80,000 tons.

The main effort in modernization is put on mechanization of mining lime stone.

Gypsum producing enterprises

Dry Plaster Factory in Gacki near Busk in the Nida valley will receive second plant and double its production;

A New Gypsum Factory in Stawiany near Kielce will be built during 1961-1965;

A New Gypsum Factory in Skorocice near Kielce, specializing in production of gypsum for floor tiles and gypsum for cement industries to be built;

A New Gypsum Factory in Siemianowice. Raw material will be transported from the Nida valley.

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Silicate Bricks.

The following plants are in the final stage of construction:

Slupsk

Legionowo near Warsaw

Radzymin " " These three brick factories located near Warsaw
will produce about 150,000,000 bricks in 1960.

Wieliszew " "

Zytkowice " Kielce

Construction will begin on the following brick factories:

Lesiow near Radom

Ludynia in Kielce area

Olsztyn with yearly production capacity of 50 million ceramic units

Wroclaw " " " of 30 " " "

These silicate brick factories with production capacity of 30 to 50 million ceramic units (average 50 million) are regarded as key construction projects for wall materials. In addition, during the years 1961-1964 several smaller silicate brick factories will be built.

Red Bricks.

Only a very few red brick factories have been built and the following three large brick factories are under construction: in Rudek, in Lebork and in Zieleniec they will be completed during the years 1960/1962.

The main investment effort is directed toward modernization of old brick factories and adaptation of some to drain pipe production. In order to increase the production of drain pipes from 39 million in 1958 and 45 million in 1959 to 360 million in 1965, reconstruction investments are underway on 60 brick factories at a total cost of 440 million zlotys.

Gas Concrete Factories.

The following gas concrete plants presently under construction will be completed in 1961/1962:

Lodz

Bielsko-Biala

Stalowa Wola

Warszawa-Siekierki

Skawina

Lubartow at which already test trial production started in 1959.

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Each of them will have a production capacity of 150,000 cubic meters of gas (cellular) concrete which corresponds to 92 million ceramic units. The following plants are in the final stage of designing:

| | |
|------------|--|
| Konin | Turow |
| Grodziec | Wroclaw with 92 million ceramic units capacity |
| Tarnobrzeg | |

All of them should be put into operation during the years 1965/1966. In addition, at the newly constructed electric power plants Halemba and Siersza, and at some old ones like Chorzow, Laziska and Zabrze, the use of smoke dusts (soot) is foreseen for production of wall blocks (sections of gas (cellular) concrete or gas (cellular) silicate type. Such installations are under construction at the old electric power stations and will be built at the new power plants. These plants are subordinate to the Ministry of Mining and Electric Power and not to the Ministry of Construction and Building Materials Industry. 24 gas (cellular) concrete plants were sold to various countries like USSR, Czechoslovakia, East Germany and Yugoslavia.

Cinder Block Factories.

Six large cinder block factories, each with about 16 million ceramic units production capacity are in the final stage of construction. They are being built in:

| | |
|---------------------|-------------|
| Czechowice | Czestochowa |
| Czyzyny near Krakow | Wroclaw |
| Warsaw in Sluzewiec | Poznan |

According to the 1961-1965 plan, six additional such factories will be built. Besides that, a number of smaller cinder block plants are also to be built.

Light Aggregate Factories.

For the first time, factories producing light aggregates--mainly "keramzyt"--are to be built in Poland. This aggregate is obtained from burning certain categories of clay and argillaceous slates. Several such factories have been designed, and, in connection with technical progress, these projects were given priority.

this decision was made in 1957, and studies and designing started in 1957). It 25X1 is foreseen that the first "keramzyt" factory will be put into operation in 1963 with 80,000 tons production capacity. The total production of "keramzyt" will amount to 300,000 tons in 1965.

Another type of baked light aggregate will be produced under the trade name "Terlit." The first "terlit" factory will start operation in 1962 with a production capacity of 50,000 tons. The total production of "terlit" will amount to 200,000 tons in 1965.

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The third type of aggregate is baked slate (lupek spiekany). The production of the first factory will amount to 60,000 tons in 1963, 200,000 tons in 1964, and about 400,000 tons in 1965.

Burned slate (lupek przepalany) is also a light aggregate. Production will start in 1961 at 50,000 tons, growing in 1962 to 200,000 tons and remaining at the same level to 1965.

Remark:

Foundry pumice (Pumex) also belongs to light aggregates, but it will be produced not by the Ministry of Construction and Building Materials Industry but by the Ministry of Heavy Industry. The investments in foundries (steel works) connected with the production of pumice are classified as priority key projects equal with other investments in foundries.

According to Fundamenty, 10 May 1959, the production of pumice will amount to:

| |
|----------------------|
| 580,000 tons in 1961 |
| 680,000 tons in 1962 |
| 900,000 " " 1963 |
| 1,450,000 " " 1964 |
| 1,850,000 " " 1965 |

This plan is not realistic according to Source and will be implemented only 70% at the utmost.

Other Key Investments:

- Asbestos Factory in Szczucinie. The first stage was completed in 1959. It will be further expanded. Machinery was imported from Italy.
- Faience Factory in Kolo.
- Porcelain Clay Factory (for table dishes) in Koszalin.
- Glazed Wall Tiles Factory in Opoczno.
- Sanitary Faience Factory in the Opole area.

As a result of the completion of these last factories. the production of the following materials in 1960 will amount to:

| |
|--|
| 6,000 tons of faience |
| 49,000 tons of stoneware (earthenware) for pipes, and sewer drains |
| 460,000 square meters of faience tiles (glazed tiles for walls) |
| 400,000 square meters of terracotta floor tiles |

- Glassworks in Ozimek near Opole. Completion of this new establishment.

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The increase of building materials production during the last 15 years, from 1945 to 1958, is shown in a table on the next page.

According to Fundamenty, 26 August 1959, the increase of production of building materials in Poland during the 1946-1958 period was as follows:

| Year | Cement in (thousand tons) | Lime in (lump tons) | Bricks in (million pieces) | Roof Tiles in (million pieces) |
|------|------------------------------|------------------------|-------------------------------|-----------------------------------|
| 1946 | 1,399 | 577 | 513 | - |
| 1947 | 1,522 | 547 | 696 | - |
| 1948 | 1,824 | 756 | 975 | - |
| 1949 | 2,344 | 868 | 1,253 | 63.4 |
| 1950 | 2,514 | 932 | 1,426 | 72.6 |
| 1951 | 2,692 | 1,018 | 1,681 | 88.7 |
| 1952 | 2,671 | 1,070 | 1,806 | 92.1 |
| 1953 | 3,294 | 1,168 | 2,337 | 85.2 |
| 1954 | 3,403 | 1,270 | 2,606 | 106.6 |
| 1955 | 3,813 | 1,342 | 2,740 | 127.3 |
| 1956 | 4,035 | 1,408 | 2,786 | 114.8 |
| 1957 | 4,496 | 1,793 | 2,936 | 122.9 |
| 1958 | 5,041 | 1,867 | 2,989 | 117.7 |
| 1959 | | | | |

11. Key Projects of Inland Waterways and Hydraulic Engineering Construction.

The inland waterways system in Poland is to be fitted into (according to directives of CEMA) the creation of the great East-West waterway (Droga Wschod-Zachod) which goes through the following rivers:

Dnieper - Pripet - Krolewski Canal - Muchawiec - Bug - Vistula - Notech-Warta - Oder - canals through East Germany - Elbe to the North Sea.

- In Poland, work has been started on the first sector, Bug - Vistula rivers. The first project on the river Bug is a water elevation dam Debe near Zegrze. It was started in 1958; the first stage of the project embraces a reservoir for 100 million cubic meters and hydroelectric power station of 20 MW which later on will be expanded to 100 MW capacity, and a bridge over the Bug. A lock to handle 1000 ton barges is under construction.

- Port Zeran in Warsaw is under construction. In 1959 a lock for 1000 ton barges was completed but temporarily only 400 ton barges are sailing until the completion of

the lock at Debe and Zegrze - Zeran canal. The first stage of this project will be completed in 1962/1963.

The Zegrze - Zeran Canal, was started in 1951, the first stage of 3,300 m was completed in 1959. The canal will be 17 km long, 32 m wide and navigable for 1,000 ton barges.

The Water elevation dam in Wloclawek belongs to the lower Vistula waterway. Construction will be started in 1959/1960 and the first stage will be implemented in 1966. This project will include a reservoir, a lock, and a hydroelectric power plant with 160 kw capacity. The cost of the first stage of investment is 1,500,000,000 zlotys.

The Water elevation dam Lomna near Warsaw, was started in 1959, but because of shortage of funds, construction is very slow. It is a small project.

The total outlays for inland waterways and hydraulic engineering construction foreseen for the 1961-65 period amount to three billion zlotys. It is a small and insufficient sum, and for this reason the planned construction of reservoirs in Solina and in Czorsztyn has been postponed.

12. Railroad Construction.

- The railroad line Sokolka - Kamienna Nowa was started in 1959 and will be in use by 1962. It will shorten the connection Bialystok-Augustow by 70 km.

- The electrification of railroads:

- Completion of the line Warsaw - Zabkowice - Bedzin - Szczakowa - Krakow and a sector Krakow-Katowice. The line is not yet working with the planned commercial speed and traffic capacity, and the signal system and other installations must be supplemented.

- Extension of this line from Krakow to Tarnow in 1961;
- Further extension from Tarnow to Debica in 1963;
- Electrification of the line Warsaw-Kutno to 1965;
- Electrification of the junction Krakow-Nowa Huta;
- Starting electrification of the junction Wroclaw and the line Wroclaw-Jelenia Gora and Wroclaw-Gliwice.

The total share of electric and combustion engine traction will increase from 15.7% in 1958 (of which electric traction 12%) to 41.1% in 1965. During the years 1961-65 about 1,000 km of railroad lines will be electrified.

The investment outlays for railroads including the purchase of rolling stock will amount to 21,700,000,000 zlotys, during the years 1961-65, i.e., 45% more than during the years 1956-60.

No new lines, besides Sokolka-Kamienna Nowa are to be built because of shortage of rails and sleepers.

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The largest railroad rolling stock repair shops are being built in Minsk Mazowiecki. Construction began in 1951 and completion will be in 1961. They will serve mainly for repair of electric locomotives.

13. Bridge Projects.

It is foreseen that during the years 1959-65 about 60,000 running meters of road bridges will be built, rebuilt and renovated, of which 38,000 running meters will be on state highways as permanent, reinforced concrete and steel bridges, and 22,000 running meters on local roads, of which 50% as permanent bridges and 50% as wooden bridges. Of these bridges the following were classified as key constructions:

The bridge over the Vistula river in Annopol
 The Lazienkowski bridge over the Vistula in Warsaw
 The Swietokrzyski bridge over the Vistula in Warsaw
 Six bridges over the Narew river
 Six bridges over the San river
 Five bridges over the Wieprz river.

Besides these the viaduct (street bridge) over the Gdansk railroad station in Warsaw with a cable concrete construction of 70 m span, is also regarded as a key bridge for reasons of technical progress.

Remark:

Until now 200 small cable concrete bridges have been built in Poland but all of them have not had long spans.

14. Key tasks of General, Rural and Municipal Construction.

The key tasks of general construction are listed in total figures. The following projects have a key priority although not of the same rank as the key industrial projects:

- Construction of 2,000,000 rooms in urban areas during the years 1961-65
- Construction of 1,200,000 rooms in rural areas during the years 1961-65
- Construction of 4,500 elementary schools of which:
 - 1,000 schools in connection with Poland's millenium from voluntary contributions and collection from ~~social~~ ^{social} means. The school building program amounts to 17 billion zlotys.
- Electrification of 75% of all villages by 1965, and 100% in 1970.
- Implementation of melioration (land improvement) programs with 18 billion zlotys during the years 1961-65.
- A homestead and farm buildings program (according to the II Plenum of the PZRR in July 1959) at a cost of about 40 billion zlotys in 1959-65.

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- The construction of water supply systems in 90 towns, settlements, and districts of cities.
- The construction of gas supply systems in 109 settlements and towns.
- The construction of sewer systems in 80 towns.
- The construction of new, and adaptation of 15 old, power plants for heat and power stations.

Alltogether 14,569,000,000 zlotys have been allocated for the period 1959-65 for construction of water supply, gas, sewer systems and heat power stations.

15. Evaluation of the Industrial Investment Plan 1959-65.

The gross investment outlays, i.e., investments and reserves (stocks) will increase, (according to a statement of Jedrychowski made at the III Party Congress in March 1959) during the five year period 1961-65 by 49%, and net investment outlays, i.e., pure investments, by 56.9% in comparison with the five year period 1956-60.

Additional tasks imposed later by the II Plenum of the PZPR in June 1959 increase these investments by about 18 billion zlotys, i.e., by about 3%. For this reason Source estimates the increase of planned investments during the years 1961-65 in comparison with the period 1956-60 to be more than 60%.

At once the following conclusion presents itself: This is a large investment program for the Polish population and it will no doubt have two effects:

- Smaller increase in living standards
- Exaggerated strain in the economic plan, and failure to meet the investment plan.

But the problem of direction of investments is still more important.

First Conclusion: The investment plan indicates a return to the priority of producer goods industry at the expense of consumer goods.

The production of producer goods will increase during the years 1961-65 by 51.4%

The production of consumer goods will increase during the years 1961-65 by 48.6%

The production of average production will increase during the years 1961-65 by 50.0%

This is a reverse of the proportions in the plan 1956-60, especially during the years 1956-58.

Almost 80% of investment outlays for industry are allocated for development of producer means. This is almost as much as it was allocated for the same industries during the Six Year Plan 1950-55 (85%) which, as is known, brought a decrease of standards of living in Poland.

The strain in the investment plan is illustrated by the figures given by the vice-chairman of the Economic Planning Commission, Secomski, who is responsible for

investments as published in Trybuna Ludu, 29 May 1959: "... During the years 1945-50 (i.e., during 14 years) 600 billion zlotys were spent for investments, and during the years 1959-65 (i.e., during 7 years) 700 billion zlotys will be spent (exactly 724 billion zlotys)..."

Thus the investment effort of the country during the years 1959-65 will be annually about two and a half times larger than during the past fourteen years when Poland was already overburdened with its intensive investment effort.

Remarks:

The outlays of 724 billion zlotys for the period 1959-65 include socialized state investments with private means of the population, and private outlays. The investments during the five years 1961-65 amount to 528 billion zlotys, i.e., about 50% more than during the current five year period 1956-60.

The share of net investments in national income will amount to 18.5% in 1965 according to the directive of the III Party Congress, but after new tasks were added by the IIInd Plenum of PZPR it will rise to about 20%. This share amounted to 15.5% in 1958.

Second conclusion: The investment plan 1959-65 indicates a further "tightening of the belt" and a slower increase in living standards, much more than during the current plan period.

The investment plan 1950-56 planned construction of 210 large projects, but this was more than was possible. As a result, despite the greatest efforts, they were able to start only 141 projects. 131 projects were only formally implemented (they were really not completely finished but it was announced that they were given for production) according to Trybuna Ludu, 12 April 1959, and Zycie Warszawy, 8 April 1959. Jedrychowski in the speech already mentioned on page 31, stated in March 1959:

"... During the Six Year Plan 1950-55 we have built 150 projects

During the present Five Year Plan we are building 120 projects

During the next plan we will build 200 projects. . ."

These figures given by Jedrychowski are not quite exact because of the 150 projects of the Six Year Plan, 19 were implemented after 1955 -- in 1956 and even in 1957. For this reason the figure of 131 projects given by Trybuna Ludu, 12 April 1959 should be accepted as true. Nevertheless the total number of construction projects built during the period 1950-60 (during the past six year and current five year plan) is equal in both sources and amounts to 270 projects. Thus during the past and current years 270 11, i.e., about 24 to 25 projects must be completed annually. It should be stated that this is possible to obtain only with the utmost effort. Meanwhile the future 1961-65

plan foresees 200 projects, i.e., an average of 40 a year, to be given for use. This ~~is definitely~~ is definitely too much and it means "overstrung string" in planning. The fundamental fault of the Six Year Plan is being repeated, i.e., not a concentration of investment but dispersion of investment efforts on too many building sites as a result of which the construction of projects will be delayed due to shortages of building materials, designs, blueprints, technical personnel and labor.

Investment outlays in comparable 1958 prices are estimated as follows:

- during the 1950 - 1955 plan 273 billion zlotys, i.e., on average 45.5 billions yearly
- during the 1956 - 1960 plan 345 billion zlotys, i.e., on average 60.9 billions yearly
- during the 1961 - 1965 plan 514-528 " " 104.0 billions yearly

As is seen, there is an enormous increase of investment effort plus a lack of concentration and dispersion of efforts which raises doubts about the reality of this plan.

Third conclusion: Too many investment projects and the simultaneous excessive increase of investment outlays threatens the reality of the investment plan 1961-65. It is certain that the planned goals will be met only after a delay of from one to two years.

Besides the lack of concentration of projects there is a further deconcentration in key directions of investments. They want at the same time to produce large increases in the following directions:

a/ to expand the home production of raw materials, especially of iron, copper, zinc ores, brown and black coal, sulphur and potassium. These are long-lasting, expensive investments with foreseen and unforeseen difficulties which will require an enormous effort.

b/ expansion of the existing electric power net by the construction of new electric power plants, electrification of railroads, electrification of villages etc.

c/ a great increase in the chemical industry; creation of a petro-chemical industry on the basis of imported crude oil (Plock and Bialowina chemical combines) and a simultaneous expansion of fertilizers and synthetic products production. Chemical investments are expensive and require a great amount of deficit materials -- pipes, cables etc.

d/ further expansion of the metallurgical industry despite the shortage of iron ore.

e/ development of the machine industry simultaneously along ten major lines.

f/ development of the building materials industry.

g/ large increase in housing construction.

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h/ large increase in agricultural investments.

Source is of the opinion that it is impossible to reach so many goals simultaneously.

Some members of the Economic Council felt that the efforts should be concentrated on the following of the above listed directions:

- on b/- Development of electric power plants and electrification of railroads and villages;
- on f/- Development of the building materials industry;
- on g/- Development of housing construction;
- on h/- Development of rural investment but in a different direction than that set by the II Plenum, i.e., socialization, or agricultural circles as a substitute for the unpopular agricultural cooperatives (kolkhozes);
- on e/- Development of some branches of the machine industry (construction, agricultural, ceramics machinery and equipment, also consumer goods such as motorcycles, refrigerators, washing machines, radio apparatus, cameras etc.);
- on c/- Development of only some branches of the chemical industry such as fertilizers, building materials, pharmaceutical articles, some artificial fibres. A larger development in the foodstuff industry and consumer goods industries.

The mining and raw materials industries - which are so favored in the investment plan - are too difficult at present and can be started only in connection with foreign loans.

The cooperation with Eastern Germany in Turow and with Czechoslovakia in Tarnobrzeg covers only a small part of the necessary financial means and as a result even these investments are a large burden for the country.

Fourth conclusion: The new 1961-65 plan shows a lack of concentration on vital development, and disperses the existing funds too on to many widely, although each field if taken separately might be wise but all together they create too much strain and the plan becomes unrealistic.

A question arises as to why the Polish government adopted such a difficult and dangerous plan after the painful experiences in the past. These are the following reasons: (1) The pressure by the USSR. In 1956 Poland abandoned, under the pressure of the population, the priority of heavy industry and forced industrialization. The USSR has compelled Poland to return to forced industrialization and to excessive investment effort at the cost of the standard of living. CEMA sees to it that every satellite country keeps within the assigned tasks of developing the military and industrial power of the Eastern Block. If there were some short term relief and concessions necessary in order to improve the living standard, they were made for

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political reasons, especially for East Germany and Hungary. (2) The policy of the USSR makes the satellites economically dependent upon the USSR, especially in raw materials. An iron metallurgical industry means greater ~~dependence~~ ^{dependence} on Soviet iron ore. The decision to build the Plock combine makes Poland dependent even more on Soviet crude oil. The development of brown coal in Poland mainly serves East Germany, and the electric current from Turow will be transmitted to East Germany.

In connection with this it is worth remembering the resolutions of the XI Session of the Council for Mutual Economic Aid in Tirana on 16 May 1959: ... "During the years 1959-64 high tension transmission lines 220 volt and above... between Poland, Czechoslovakia, East Germany and Hungary (further cooperation between Czechoslovakia and Rumania will follow by the construction of a joint heat and power plant in Rumania with Czech help),

-- between Hungary and USSR through West Ukraine, and

-- between Poland and Kaliningrad, USSR.

A transmission line from Bulgaria to Rumania is in preparation..."

An article under the title "Electric lines will connect Poland with East Germany, Czechoslovakia and USSR" published in Zycie Warszawy on 7 Sept 1959 stated:

.... "Such cooperation has already existed for several years between Poland and East Germany. For the brown coal from Turoszow region we receive electric power of ~~350~~ ³⁰⁻³⁵ MW from the electric power station Hirschfelde in East Germany. At the end of the current year a high tension line of 220 KV Skawina - Liskowiec CSR will be given for use, through which will be possible to transmit 150 MW.

The line Pozici - Walbrzych will supply the current from Czechoslovakia to the Walbrzych region.

In 1960 a 15 km long 220 KV transmission line Berzdorf - Turow will be put in operation. This line will supply about 60 - 160 MW electric current to Poland to the Turow region to help during the difficult period of construction of the Turoszow combine. After 1966 the Turoszow combine will supply the electric power to East Germany and to Czechoslovakia on the transmission line Turow - Tarnov in Czechoslovakia.

At present Poland supplies 2 MW from Zamosc to the frontier area of the USSR. In 1959 the transmission line Kaliningrad - Ketrzyn will be completed, through which the USSR will supply 10 MW to the Olsztyn voivodship..."

This shows that Poland was included in the joint electric power net of the Eastern Bloc and its economic dependence will increase greatly during the years 1960-64.

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The next reason is pressure by Khrushchev for the development of synthetic chemistry in USSR and in satellite countries; also pressure for exploitation of copper ore of which there is deficit in the Eastern Bloc. Besides, there are reasons of division of tasks and specialization inside the Bloc which are not always in conformity with Polish interests, but are rather decided from the point of view of the Bloc and assistance for China, than from the point of view of the individual European Satellites.

Pressure exerted on Poland by CEMA for development of the coke industry. The Eastern Bloc has a deficit of coke and for this reason Poland must expand the anthracite coal mines in the Rybnik area and its coke batteries. (3) A further reason of an internal nature is that some feel that Poland is threatened with unemployment in connection with the increase in population, and that it is urgent to increase investments in order to prepare places of work for the future. (4) The next reason is certain failures in agriculture. The government stopped the kolkhozes but did not turn to a free individual agricultural economy. The agricultural farms are small and for this reason, not very productive. The formation of large productive farms is not permitted; instead agricultural circles as a substitute for kolkhozes are imposed, and they require large investment outlays but do not bring profitable results. It is worthwhile to quote some recent statements concerning agriculture in Poland. Gomulka stated during the harvest celebration in Warsaw on 7 Sept 1959 according to Trybuna Ludu, 8 Sept 1959:

..."The present economic year in agriculture must be considered an unfavourable year...Although the total agricultural production during the current year should not differ in principle from the level of the past year, we are estimating it as unfavourable. ...Although 40% of our actively employed population works in agriculture, our agricultural economy does not satisfy the needs of our country..."

There is not doubt also pressure from the USSR to return to at least a disguised form of socialized agriculture. (5) The shortage of funds and materials for investments results in a desire to export at any price - in most cases a deficit export - and means development of branches of the machine and chemical industries which otherwise do not have any economic motivation. (6) The return to the preponderance of Party reasons in economic policy, and a tendency to increase, at any price, the industrial potential of heavy industry as an instrument for political bargaining in the international arena. (7) The problem of the Western territories. The new plan foresees the increase of investments in the Western Territories in order to strengthen the political situation. The neglect of the Western Territories in the past and their devastation brought losses and damaged the prestige of Poland.

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At present establishments which were not used are being put into operation. There are still 61 factories in the Western Territories which are not used, of which 17 will be put into operation in 1960/1962. A decision was made about a further 19 of them which are now in the designing stage; the remaining 25 will be taken for use towards the end of 1961-65 plan.

All above mentioned reasons, mostly political and not economic, had an influence on the setting of a plan which looks very difficult and whose realization is endangered.

No doubt the American loans and some decrease of pure ~~permanent~~ investments permit a little easier start of the plan. Nevertheless it seems that the plan is too difficult and that it will brake the improvement of living standards of the population.

(8) Further reasons are the mistakes made in the past: The protracted investments started during the Six Year Plan and which cost much more than expected because of lack of experience and poor preparation; the construction of ~~unnamed~~ projects which do not serve for useful production. These cause additional costs for their adaptation for useful production and at the same time there is no way out; they must be completed even if there are some reservations as to their economic profitability.

At the same time it is necessary to make up for the neglects of the past period, e.g. to expand as quickly as possible the building materials, agricultural machinery, construction machinery and equipment, and chemical building materials industries etc. All this must be done simultaneously with the tasks imposed by CEMA and causes an excessive growth of goals. (9) The government is partly aware of these difficulties. A revision of investment projects was ordered in 1959 and it is probable that some investments were cut down. But the majority of them are listed as key projects and can not be cancelled. Source is of the opinion that the 140 key projects described by him (out of 200) will be retained in the investment plan without any doubt.

The fifth and the last conclusion: The 1959-65 investment plan is exaggerated in its absolute magnitude, in its dimension and directions. These directions are often the result of external causes imposed by the Eastern Bloc and by political internal Party reasons and are not always in conformity with the economic needs of the country. This undermines the reality of the plan, causes delays and prolongs the implementation of tasks planned for 1965 from one to two years. At the same time it will cause excessive costs and slow down the increase in the living standard.

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